ENVIRONMENTAL RESOURCES

A. INTRODUCTION

The growth of Sherwood will bring with it increasing demands on its environmental resources creating conflicts between the competing values of conservation and development. Environmental resources planning in Sherwood must include recognition of the limits to the natural resource base, the carrying capacity of the environment and the availability of non-renewable energy resources. The Environmental Resources Element of the Plan includes a 1990 inventory of Sherwood's environmental resources and planning goals, policies and strategies for their management. It also includes the Regionally Significant Fish and Wildlife inventory completed by Metro in 2002 and adopted as Map V-2 of this Plan.

In 2002 Metro completed an inventory of regionally significant fish and wildlife habitats and in 2005, the Tualatin Basin Natural Resources Coordinating Committee, on which the City of Sherwood participated, forwarded a program to protect much of the inventoried resources after conducting a detailed ESEE analysis. The program and supporting documents is adopted by reference and maintained by Washington County Department of Land Use and Transportation staff. The goals and policies of this plan provide the foundation for implementation of the Basin Program. For the purposes of this element, environmental resource management shall be addressed under the categories of natural resources and hazards, environmental quality, recreational resources and energy resources. The following briefly describes the value of open spaces, and natural resources to the community of Sherwood. Goals and policies for the protection of designated historic resources are also included in this chapter.

Wetlands

Wetlands are defined as follows: Areas that are inundated and saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Among the useful functions served by wetlands are the following:

- Wetlands provide important habitat for warm water fishes, numerous waterfowl, non-game birds, beaver, muskrat, nutria, otter, mink and raccoon. Other important non-game species such as mammals, reptiles, and amphibians are also found in wetland areas.

- Wetlands serve as temporary storage areas for flood waters, reducing floodpeaks and the frequency of flooding in downstream areas.

- Wetlands function to improve water quality by reducing sedimentation and removing nutrients.

- Wetlands rank as one of the world's most productive ecosystems. The biomass produced within wetlands provides food and cover to a multitude of animals.

- Wetlands provide scenic, educational and recreational opportunities and values.

Riparian Areas

Riparian areas are defined as lands which are adjacent to rivers, streams, lakes, ponds, and other water bodies. They are transitional between aquatic and upland zones and contain elements of both aquatic and terrestrial ecosystems. They have high water tables because of their close proximity to aquatic systems, soils are usually largely of water-carried sediments, and some vegetation that requires free water or conditions that are more moist than normal. In Sherwood, riparian zones occur along creeks and streams. Riparian areas have a number of attributes and serve several useful functions.

- Riparian zones generally contain water, food, and cover three important habitat components.

- Riparian areas provide important habitat for songbirds, raptors, raccoon, mink, beaver, deer, and muskrat. Various small mammals, reptiles, and amphibians are also found.

- Riparian zones serve as natural migration routes and travel corridors for many wildlife species.

- Riparian forests stabilize stream banks and adjacent slopes, promoting better water quality in the adjacent waterways.

Scenic Resources

Sherwood has a geographic setting which bestows on the city a number of notable visual amenities. The city is surrounded by hillsides with views of the Tualatin Valley and the Cascade Mountain range. This setting and its visual amenities contribute substantially to the attractiveness of the community as a whole.

While prominent visual resources are known to exist and their value in general to the community can be acknowledged, the identification of specific resources can be a highly subjective undertaking which does not lend itself to precise boundary delineation.

Open Space

Open space and recreation lands serve a number of functions. Open space conserves natural and scenic resources, protects water supply and quality, minimizes erosion and runoff, enhances the value of neighboring property, serves aesthetic and recreation needs, buffers incompatible land uses, promotes orderly urban development and enhances city design. Open space and recreation lands may be designed to serve a variety of recreational needs

ranging from hiking to active team sports. Both private and public lands may provide open space benefits. Privately owned land reduces recreational use pressure on public land. Certain uses of open space land such as the minimization of landslide potential on steep hillsides requires joint efforts by the city and private developer. A city's open space and recreation land resource is composed of both private and public lands which simultaneously serve a number of individual and community objectives.

Energy Sources

There are no developed energy sources within the Sherwood UGB. All fossil and wood fuels, and electricity generated by hydro and nuclear power, come from sources outside the city. There are however, unconventional energy sources available within Sherwood. These include solar and wind energy. Solar energy, in particular, holds promise as an alternative form of energy which could meet a significant amount of the energy demand for domestic space heating and water heating. The technology exists to take advantage of solar energy and wind energy for these purposes, and such use should be encouraged.

The following Table V-I is an inventory of the areas natural resources and open space, wetlands, parks and schools, historic and scenic resources. These areas are also identified on the Natural Resources and Recreation Plan Map, updated in 1990, (Map V-I).

B. ENVIRONMENTAL RESOURCES POLICY GOALS

The following policy goals were the result of work by several Sherwood Citizen Planning Advisory Committee (SCPAC) subcommittees. The goals were reviewed and updated in 1989-1990. The goals and policies were further reviewed and updated in 2006 to implement the Tualatin Basin Program, a three year project undertaken by all the jurisdictions on urban Washington County to develop a basin wide approach to natural resource protection. The goals define the direction that resource management should take in the Sherwood Urban Area. The Goals, Policies and Strategies that follow relate to the resources identified on the Natural Resources and Recreation Plan Map and the inventory listed in Table V-1 and the Regionally Significant Fish and Wildlife Habitat Inventory (Map V-2) for properties located inside the Metro Urban Growth Boundary on or before December 28, 2005.

The following are the adopted planning goals for the Environmental Resources of Sherwood.

Planning Goals: Natural Resources and Hazards

1. Actually and potentially productive agricultural and forest land in the planning area should be preserved until the need for its conversion to urban uses can be demonstrated. The following factors should be considered in establishing the need for such conversion.

    a. A documented need for additional land for the proposed urban use.

    b. Generally, lands with poorer soils should be converted first.

c. The proposed use is or can be made compatible with adjacent agricultural and forest lands and uses. Low density buffer zones should be used in transition areas.

2. Incentives for the continuation of agricultural and forest uses on lands that are not needed for urban uses should be continued and/or developed.

3. The urban uses of wooded areas should be recognized and encouraged. They include:

   a. Watershed protection of wildlife and fisheries habitat and recreation.

   b. The prevention of soil erosion.

   c. Urban buffers, windbreaks, scenic corridors, and site landscaping.

4. Limit land development in areas with known natural hazards, special topographic soil, or drainage characteristics according to the kind and degree of hazard or characteristic present.

   a. Restrict the nature and intensity of development in:

      1) 100-year floodplains

      2) Areas with slopes which have slide or erosion potential.

      3) Areas with weak foundation soils.

      4) Wetlands

   b. Natural hazards such as runoff from paving and soil slippage due to weak foundation soils that could result from new developments should be considered.

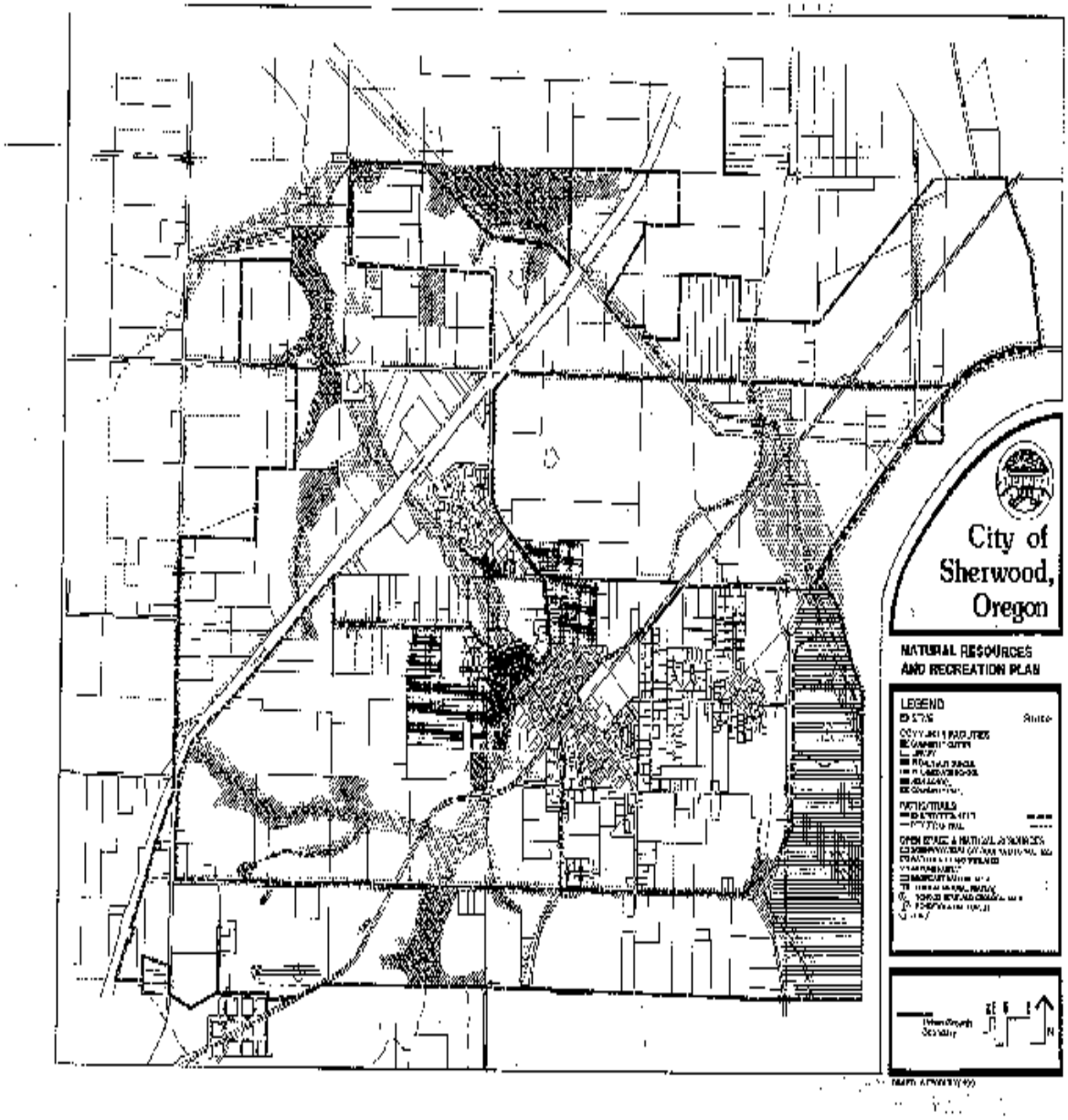
5. Protect fish and wildlife habitats and significant Natural Areas where feasible.

6. Protect mineral and aggregate sites where feasible and practical.

TABLE V-1
SHERWOOD URBAN GROWTH AREA
OPEN SPACES & NATURAL RESOURCE INVENTORY - 1990

Type/Size	Location	Acres
1. Wildlife/Habitat & Wetlands		
a. Cedar Creek & Tributaries	Traverses NW & SW Sectors	
b. Rock Creek & Tributaries	Traverses NE & SE Sectors	
c. Pond/Wetland	2S 1 31D:501	
2. Open Space		
a. BPA & PGE Power Easements		
b. Stella Olsen Memorial Park	2S 1 32BC:6401	13.0
	2S 1 32BB:900	
c. City Hall Park	2S 1 32BD:5200	0.4
d. Community Campus Park	2S 1 29C:1402	0.21
e. Gleneagle Park	2S 1 30DD:1400,1800	2.7
f. Reservoir Park	2S 1 32DA:200, 201	1.7
g. St. Paul Cemetery	2S 1 30A:1501	2.0
h. Maple Lane Cemetery	2S 1 30A:300	0.9
i. Sherwood High School	2S 1 31A:1801	25.0
	2S 1 31AA:1000,1100	6.8
j. Hopkins & Intermediate Schools	2S 1 32BA:800,900,801	16.0
4. Significant Natural Areas		
a. Tonquin Scabland Geologic Area	2S 1 33C, 2S 1 33B	166.0
b. Ponderosa Pine Forest	2S 1 31C:700	6.8
c. Cedar Fir Woods	2S 1 30A:1100 & 1200	
5. Scenic Resources		
a. Scenic Views	2S 1 29B:300, 2S 1 30A:1601	
	2S 1 30D:2201, 2S 1 32AD	
b. TSGA Scenic Resource	2S 1 33	

NATURAL RESOURCES MAP



Planning Goals: Environmental Quality

1. For the purpose of protecting the functions and values of water resources, protect the water quality of Rock Creek, Chicken Creek, Cedar Creek, and their tributaries through control of runoff water by the following means:

    a. Construction site sediment control.

    b. Storm sewer design and location.

    c. Regulation of floodplain alterations.

    d. Adoption of the regional Storm Water management plan.

    e. Establish buffers between development and the designated wetlands.

    f. Acquire through dedication at the time of development, or through purchase, all wetlands and floodplains.

    g. Maintain or reduce stream temperatures.

    h. Maintain natural stream corridors.

    i. Minimize erosion, nutrient and pollutant loading into water.

2. Protect the air quality of the city through control of pollutants by the following means.

    a. Compliance with the DEQ air quality standards.

    b. Encouraging the development of nonpolluting industries in designated well-planned industrial areas.

3. Protect residential areas from the effects of noise by the following means:

    a. Encouraging buffer zones between Highway 99W and residential areas.

    b. Cooperation with the DEQ noise control program to control industrial noise.

    c. Comply with DEQ noise control standards.

Planning Goals: Recreational Resources

An open space and recreation system will be established in the City through the preservation of natural resources and the development of facilities which satisfy residential needs. This Section also includes historic and cultural resources.

1. Preserve the scenic open space, wetland, and riparian values of the Rock Creek and Cedar Creek greenways. The greenways should remain undeveloped as passive open space in order to maintain their natural integrity and habitat.

2. Incorporate easements and rights-of-way for utilities and drainage into a system of greenways and trails.

3. Acquire park and open space land as far in advance as possible to avoid high land costs and the possibility of having to purchase developments later on. The City intends to take full advantage of matching funds from state and federal agencies in the development of its park system.

4. Work with school boards of the area in the Sherwood School District in the selection of new school sites, so that adjoining neighborhood parks can be acquired at the same time.

5. Avoid extending streets, utilities, or other urban services into planned open space areas in order that additional pressures for their development are not generated.

6. Support taxation policies for planned permanent open space areas which will make it feasible to keep them from being developed.

7. Give priority to neighborhood and community parks and to such open spaces as can be secured through administration of the City's implementing ordinances when it is practical for the City to improve and maintain them. Work with appropriate agencies to realize other park and open space elements of this plan.

8. Utilize sites required for public buildings or works for park and open space purposes where feasible. For instance, water tanks or reservoirs on elevated locations may also provide a suitable location for a neighborhood park or a place for viewing surrounding terrain.

9. As practical, and financially feasible, develop parks and open spaces in Sherwood in accordance with neighborhood planning principles set forth previously and the standards and guidelines contained in Section E of this chapter.

10. Development of open space and recreational facilities shall include a consideration of the carrying capacity of the air, land and water resources of the area.

11. Open space and recreational facility planning will be coordinated with adjacent communities for maximum benefit. Examples of coordinated planning may include the preservation and acquisition of the Rock Creek flood plain (also known as the Onion Flats) which separates Sherwood from Tualatin, and the preservation of flood plains and natural areas north to the Tualatin River. Also, the preservation of the

Tonquin Natural Area will be coordinated with the City of Tualatin and Washington County.

12. The 1989 Sherwood Cultural Resource Inventory is included as an appendix to this Plan. The Survey identified 132 potential historic landmarks of varying value. The City has adopted a process by which sites will be reviewed for historic landmark designation and protection. Until completion of that process, if any significant structure listed in the survey is proposed for alteration, construction or demolition, the City shall initiate the review of such building for historic landmark designation, and will not issue a building permit until that process is complete.

13. Provide and maintain a wide variety of recreational facilities based on a determination of the recreational needs of local residents.

14. Encourage the timely and efficient implementation of open space, natural resource and recreation objectives through the use of all available means including but not limited to:

    a. Land acquisition by purchase, donation, and dedication.

    b. Tax incentives for limiting development.

    c. Land development controls in hazardous or ecologically sensitive areas, i.e., flood plain wetlands, etc.

    d. Standards for new development requiring adequate provision of open space and recreation areas and the preservation or replacement of natural features.

    e. Financing and program administration techniques including park district formation, systems development charges and joint city-school district projects.

Planning Goals: Energy Resources

1. Encourage recycling.

2. Identify the role of the City in energy conservation and coordinate local efforts with county, regional and state agencies.

3. Encourage the expanded use of renewable energy resources.

4. Encourage energy efficiency in the design and use of sites, structures, transportation systems and utilities.

C. NATURAL RESOURCES AND HAZARDS

1. EXISTING CONDITIONS (See Section V - Background Data and Analysis)

The Sherwood UGB has three major natural resource categories:

a. Rock and Cedar Creeks and their associated tributaries, flood plains, wetlands and ponds.

b. The Tonquin Scabland Geologic Area (TSGA) and the Ponderosa Pine Forest natural areas.

c. Miscellaneous open spaces and scenic views.

The following natural resources are not present within the City:

a. Energy sources

b. Wilderness

c. Oregon Recreation Trails

d. Wild and Scenic Waterways

e. Mineral and Aggregate sites

2. OBJECTIVES

The planning objectives for the City of Sherwood's natural resources are to:

a. Encourage preservation of important natural habitat associated with Rock and Cedar Creeks and, at the same time, prohibit development in flood hazard areas.

b. Protect the Tonquin Scabland Geologic Area, especially the identified critical natural features in the TSGA.

c. Phased land-use changes to maintain agricultural production until land is needed for development.

d. Discourage incompatible development on steep slopes.

e. Protect the identified Ponderosa Pine forest.

f. For properties with regionally significant fish and wildlife habitats that are not protected under stricter regulations, encourage use of habitat friendly development practices during development review.

g. Remove code and procedural barriers that discourage the use of habitat friendly development practices.

3. POLICIES AND STRATEGIES

To achieve the above objectives the following policies and strategies are established:

Policy 1 **Flood plain shall be prohibited from development in order to reduce the risk of flooding, prevent or reduce risk of human life and property, and maintain functions and values of floodplains such as allowing for the storage and conveyance of stream flows through existing and natural flood conveyance systems.**

Strategy:

- A flood plain ordinance has been adopted and will be periodically updated, that regulates development or fill in designated flood plains.
- Greenway areas along Rock and Cedar Creeks will be acquired through dedication at the time of development, or by purchase, to preserve drainageways, open space, wetlands, and wildlife habitat.
- Greenway parcels will be obtained as dedicated portions of PUD's, subdivisions and partitions, or any other residential, commercial or industrial developments.
- Adopt ordinance provisions regulating construction practices in identified shallow groundwater areas (see Figure V-6 Background Data and Analysis.)
- Density transfers may be allowed on land adjacent to or included in designated greenways.

Policy 2 **Habitat friendly development shall be encouraged for developments with Regionally Significant Fish and Wildlife Habitats identified as Map V-2**

Strategy:

- Allow minor modification to some standards for developments with identified Regionally Significant Fish and Wildlife habitats subject to clear objective standards.
- Review the development code to identify standards that may conflict with habitat friendly development practices and modify as deemed appropriate.
- Modify design and construction standards to include pervious management options.

- Continue participation on the Natural Resources Coordinating Committee to monitor and modify the success of the Tualatin Basin Program for natural resource protection.

Policy 3 **Prime agricultural soils will be reserved from development until required for other uses.**

Strategy:

- A plan for phases land use transition will be developed.

Policy 4 **Provide drainage facilities and regulate development in areas of runoff or erosion hazard.**

Strategy:

- Identify low density development for steep lands.

- Adopt runoff and erosion control standards and practices during and after construction in identified runoff and erosion hazard areas (see Part 1 Background Data and Analysis).

- Require erosion prevention measures and sediment control practices during and after construction to prevent the discharge of sediments.

D. ENVIRONMENTAL QUALITY

The air, land and water quality of Sherwood is generally good; the City's environmental quality is a community asset which pays both social and economic dividends, and many residents have chosen to locate here based on these environmental amenities. It has been well documented over the past three decades that air, land and water pollution can create heavy economic liabilities and impose exorbitant cleanup costs on communities. Therefore, though the present level of environmental quality in Sherwood is good, it is important to recognize that continued growth and development is accompanied by the potential for environmental degradation.

There are no airports, wastewater treatment facilities, sludge or solid waste disposal sites or motor sports facilities in the Sherwood UGB.

1. AIR QUALITY

Sherwood occupies a portion of the Portland-Vancouver Interstate Air Quality Maintenance Area (AQMA). Planning of air quality control programs within the AQMA is the designated responsibility of the State Department of Environmental

Quality (DEQ) and METRO. Air quality standards designed to protect the public from the adverse effects of air pollution are established by the state and federal governments. Two major air pollution categories are considered in the regulations: point source (such as smokestacks) and area source pollution (such as auto emissions).

Both point and area pollution sources emit a variety of contaminants, and the DEQ monitors and sets standards for these various sources of air pollution. Nevertheless, the Portland-Vancouver AQMA does not always meet all federal and state air quality standards; air quality standards for carbon monoxide, ozone and total suspended particulates have been exceeded on several days, during each year since 1982. Exceedance was exceptionally bad in 1985, when air stagnation occurred on an unusually large number of days.

a. Carbon Monoxide

Most violations of carbon monoxide occur along major traffic arterials, though an appreciable reduction in carbon monoxide levels has occurred throughout Portland-Vancouver AQMA during the past ten years. A continued reduction in carbon monoxide violations is predicted, as a result of better air quality monitoring systems, expanded use of light rail and other transit, and DEQ's vehicle inspection program; however, the potential for future violations still exists, particularly in new areas, where rapid development creates continual changes in the urban pattern.

b. Ozone

Ozone levels in the Portland-Vancouver AQMA have not changed much in recent years. The ozone levels for the area are actually recorded about twenty miles south of Portland (near Canby), and are a product of hydrocarbons emitted throughout the AQMA. The location of problem sources is not easily determined owing to the complex behavior of the ozone gas, itself. However, by reducing volatile organic compound emissions (from motor vehicles, asphalt paving, and other commercial and industrial sources), many future violations of the EPA standard could be avoided. Efforts in the Sherwood area are likely to focus on automobiles, although other control measures include reducing the volatile solvent content in architectural coatings or industrial painting operations.

c. Point Source

There are no major or significant point source polluters in Sherwood.

d. Sherwood and the AQMA

Because the AQMA encompasses an entire metropolitan area, peaks and valleys of air pollution concentrations and sources exist within its boundaries. The area sources of pollution are spread fairly evenly throughout the AQMA, with concentrations occurring along heavily traveled streets and highways. Most point source emissions originate in the traditional industrial areas bordering the Willamette and Columbia Rivers.

Sherwood does not directly contribute to the point source pollution, but does add to the overall air pollution problem through its area sources, such as building exhausts, and vehicle emissions. Future protection of the City's air quality is largely the responsibility of the regional AQMA agencies, Department of Environmental Quality and METRO. For example, the siting of any major air contaminant discharges in Sherwood would have to be done in compliance with state and federal air quality regulations. The City is only involved in the siting of point source dischargers through its process of issuing statements of compatibility for the proposed use. Such statements of compatibility must be issued by Sherwood before DEQ will issue the required permits.

2. WATER QUALITY

The quality of Sherwood's surface water, governed by State Department of Environmental Quality (DEQ) regulations, is generally good, although surface waters are not used for consumption, and rarely for active recreation. The quality of groundwater underlying the Sherwood area is also good. While the quality of this groundwater presently meets both state and federal drinking water standards, there is potential pollution from either point sources (directly, from sewage outfall pipes, for example), or non-point sources (indirectly, from septic tanks or cesspools). Sherwood has no point-source water polluters. Sherwood is in a large sensitive aquifer area, particularly in the southeast sector of the UGB. However, this area is all planned for low or very low density residential use and will be connected to sewer.

a. Non-Point Sources

Indirect pollution of a body of water from either surface or groundwater flows as a result of storm runoff is an increasing problem in urban areas, since urban runoff transfers contaminants from the air and land into surface and groundwater.

Streets are a significant source of non-point pollution when litter, silt, vegetative debris, oil, grease, and other chemical deposits from automobiles accumulate in surface runoff. Construction sites also contribute silt from disturbed areas, and chemicals from heavy equipment and construction

processes. Similarly, gardens, lawns, nurseries, and farm operations also contribute silt from disturbed soil areas, as well as fertilizers and pesticides.

All of Sherwood's non-point sources of water pollution are controllable to some extent. Regular street sweeping, solid waste collection and enforcement of anti-littering ordinances help to minimize street debris. Street pollution originating from automobiles can be reduced by oil recycling and the use of oil and grease separators. Oil and grease separators are required in new parking lots. Storm runoff, stream sedimentation, pesticides and fertilizers, and other potential pollution problems in the Tualatin River sub-basin are just beginning to be addressed through the Washington County Surface Water Management Plan. Eventually a surface water drainage district will be found. Sherwood is mandated to participate in that process and adopt any rules and regulations to control surface water pollution.

3. NOISE

a. Impacts of Noise Pollution

Noise might be simply defined as unwanted sound. Just as contaminants in water harm the environment, noise can degrade the livability of a community and damage the physical and mental health of persons living there. Like other kinds of pollution, noise also accompanies urban development.

Noise is measured in terms of its loudness and pitch. The loudness, or magnitude, of sound is usually measured in decibels (dB). The pitch, or frequency, of sound is expressed in Hertz (Hz), or cycles per second. For human beings, the audible spectrum ranges from 20 to 20,000 Hz and from zero to more than 140 dB. Sound pitch and magnitude are often measured together on a weighted decibel scale.

Though coping with noise is a fact of urban life, it becomes pollution when its magnitude becomes harmful to our health and well-being. The U.S. Environmental Protection Agency (EPA) has documented many of the detrimental effects of noise. The findings of the EPA regarding the detrimental effects of noise include hearing loss, emotional stress, sleep disruption and even risk to unborn infants. Even when noise is not a direct source of physical or mental problems, it is a recognized cause of physical and psychological stress which has been directly attributed to numerous health problems. Broad reductions in harmful noises have not occurred, however, probably due to a lack of education as to the negative effects of noise. It is possible to limit further increases in noise that result from urban growth, however, and this may be a more practical approach to controlling noise levels.

b. Noise Sources in Sherwood

In Sherwood, noise sources fall roughly into two categories; noises that occur intermittently, such as construction projects, and those which occur on a continuous basis, such as traffic.

The first group includes unusual, occasional noises, which often prompt police complaints when they reach a disruptive level. The second group includes noises which are continuous contributors to the ambient noise levels that are present throughout the city. These noises are nearly always present, and specifically include motor vehicle traffic on Hwy. 99W, industrial and commercial noises. Sherwood has no commercial or industrial businesses in violation of state noise standards.

c. State and Federal Noise Control

The Federal Noise Control Act of 1972 placed a number of noise related programs under the authority of the environmental Protection Agency (EPA). The EPA's authority extends to aircraft noise (with Federal Aviation Administration), interstate railroads and motor carriers and other noise sources of national concern.

The State Noise Control Act of 1971 gives the DEQ authority to adopt standards for motor vehicles, industry and commerce. The standards establish motor vehicle noise emission limits and set ambient noise limits for commercial and industrial operations. The standards vary according to time of day and proximity to "noise sensitive properties". The DEQ is normally involved in local noise problems when it receives a citizen complaint and the noise source falls under DEQ authority. The DEQ investigates these complaints and works with the owner or operator to resolve the problem. DEQ's role in noise prevention, because of the absence of permit authority, is confined to technical assistance.

4. OBJECTIVES

The planning objectives for the City of Sherwood are to maintain the high environmental quality of the City and to minimize degradation from growth.

5. POLICIES AND STRATEGIES

To achieve the above objectives the following policies and strategies are established:

Policy 1 Water quality will be protected from erosion and other forms of degradation.

Strategy:

- To minimize erosion, nutrient and pollutant loading into water, runoff and sedimentation ordinances will be considered for protection of water quality from construction sites.

- Flood plain and wetlands will be protected and preserved by greenway, flood plain and wetlands ordinances.

- Industrial development will not be permitted in the sensitive aquifer area and all urban development will be required to connect to City sewer.

- Maintain or reduce stream temperatures and maintain natural stream corridors by providing vegetated corridors that separate water resources from development.

- Encourage use of habitat friendly development practices including, but not limited to, the use of pervious pavement systems where appropriate, bioswales, green roofs, and rain gardens.

Policy 2 **Air quality will be protected from significant degradation.**

Strategy:

- Sherwood will cooperate and work with DEQ and MSD to develop a regional control strategy to bring the Urban Area into attainment with federal air quality standards.

- Permitted commercial, industrial, and institutional uses shall comply with applicable State air quality rules and statutes.

- The City will encourage residential weatherization to reduce the need for wood stoves.

Policy 3 **Noise sources will be shielded from residential neighborhoods.**

Strategy:

- Buffers along Highway 99W will be encouraged to minimize noise penetration.

- Residential noise will be controlled by city ordinance.

- Industrial and commercial noise will be controlled by DEQ standards.

Policy 4 **The City will follow DEQ Standards relating to land and air quality except where additional standards or more restrictive standards are required to address locally perceived environmental problems.**

E. RECREATIONAL RESOURCES

1. EXISTING CONDITIONS

The City of Sherwood has substantial open space and recreation opportunities within both the City limits and the urban growth boundary. Adjacent recreational opportunities for the region are associated with a potential greenway along the Tualatin River, the Tonquin Geological Area, Hedges Creek Wetlands and the proposed Rock Creek National Urban Wildlife Refuge in the northeast sector of the Sherwood UGB.

The following recreational resources are not present within the City:

- Waterway use facilities,
- Hunting,
- Angling, and
- Winter Sports

Existing City Parks - Developed: Stella Olson Memorial Park is approximately 13.0 acres in size. Most of this park lies in the Cedar Creek flood plain. Park facilities consist of a children's play area, three tennis courts and one mile of hiking, picnic tables and a lighted pathway. A park master plan has been adopted and further improvements are being made. There is a .4 acre park adjoining City Hall with playground equipment. There is .21 acre Community Campus Park adjoining the Sherwood Senior Community Center.

Existing City Parks - Undeveloped: The City was deeded a three-acre flood plain lot as a donation of a subdivision development. There is currently no access to the site. This site is suited for a portion of a greenway system along Cedar Creek. Since a substantial part of the site is in the flood plain, recreation development for intensive use is not advisable. The City water reservoir property along East Division St. contains approximately two acres of land. This site would be appropriate for use as a neighborhood park and/or children's play area. It is on high ground within the City and has a grassed area that could be designed as a play area. There is 3.2 acres of city property at the end of Roy Street reserved for a future park site.

Other Open Spaces - include the St. Paul Lutheran Church open space and cemetery and the Maple Lane Cemetery.

Historic Landmarks - In 1989 the "Sherwood Cultural Resources Inventory" identified 132 potential historic landmarks.

2. OBJECTIVES

The Planning objectives for the City of Sherwood are to maintain open space for the people of the City, protect designated historic landmarks, and to provide a wide variety of recreational facilities designed to fit the needs of the City.

3. POLICIES AND STRATEGIES

To achieve the above objectives the following policies and strategies are established.

Policy 1 **Open Space will be linked to provide greenway areas.**

Strategy:

- Floodplain and wetlands ordinances and dedication and acquisition programs will focus on protection of rock and Cedar Creek greenways.
- Connections will be made along 99W to be used as a noise buffer and greenway link.
- Density transfer may be allowed on lands adjacent to the proposed greenways taking into consideration site conditions and compatibility to the surrounding neighborhood.

Policy 2 **The City will maximize shared use of recreational facilities to avoid cost duplication.**

Strategy:

- The City will continue sharing developed facilities with the school district.
- The City will explore the use of shared facilities with the City of Tualatin.

Policy 3 **Where there are conflicting uses proposed for identified open space, natural or scenic resources, the City will permit only those uses justified by analysis of economic social, environmental and energy consequences.**

Strategy:

- Establish a community design review procedure to evaluate the consequences of conflicting uses for identified resources and to protect such resources where possible, as development occurs.

Policy 4 **The City will encourage and support the private sector in the provision of needed recreational opportunities.**

Strategy:

- The City will adopt and implement standards for the provision of on-site open space and recreation areas and facilities in private development. The responsibility of new developments in meeting standards may, where appropriate be met by the provision of privately owned and maintained areas and facilities.

- The City will encourage the provision of private commercial recreation areas and facilities which address community recreational needs.

Policy 5 **The City will protect designated historic and cultural landmarks in accordance with the Code standards.**

Strategy:

- The City will evaluate the 132 identified historic and cultural sites in accordance with adopted Code standards and determine which sites should be designated landmarks.

4. PARK, OPEN SPACE AND RECREATION STANDARDS

In order to prepare and implement a park and open space plan, reasonable minimum standards governing the purpose, nature and level of services and amenities have been developed. The standards are intended as suggested minimum requirements for the type, design, size and location of park and open space plan features consistent with the needs of a growing population. Beyond the minimum standards put forth, the City intends to encourage the provision of facilities and services to meet the particular needs and desires of the residents to be served, as practical in terms of the City's ability to meet the financial obligations associated with park development.

a. Tot Lots/Mini-Parks

Size: 2,400 sq ft, up to 1 acre

Acres per People: Minimum of 1 acre to serve needs of 1000 people.

Location: Based upon need by the area to be served.

Facilities/Activities: Paved play area for hard surface games and toys; play equipment; sand area for digging; benches; drinking fountain; tables; trash receptacles; area lighting; landscaping and irrigation, etc.

Age group to be served: Primarily ages 18 months to 6 years and parents.

b. Neighborhood Parks

Size: 2-5 acres

Acres per People: Minimum of 1 acre to serve needs of 500 people or 1 park to a neighborhood of 2,000 to 4,000 people.

Location: Central to population to be served, service area is considered to be an area ½ mile in radius. Can be located next to or combined with school recreation facilities. Be highly visible, away from major arterials and easily accessible to surrounding residents.

Facilities/Activities: Large grass area for informal as well as organized games; play apparatus; covered shelter; paved surfaces for games and wheeled toys; picnic tables, benches, trash receptacles, drinking fountain, telephone, area lighting; fencing; landscaping and irrigation, etc.

NOTE: Exact facilities will depend largely upon neighborhood need.

c. Community park

Size: 10 to 25 acres

Acres per People: Minimum of 1 acre to serve needs of 1000 people, or 1 park to a community of 20-25,000 people.

Location: Preferably central within the community. Can also be established in relation to a significant natural feature or cultural facility (i.e. similar to Sherwood's present community park). Should have direct access to major arterials, bike paths and public transportation.

Facilities/Activities: Specially designed game fields, tennis courts and hard surfaced game courts; picnic areas; picnic and multi-purpose shelter; play areas for different age groups; horseshoe pits; parking; foot paths; fencing, area lighting, benches, tables, drinking fountains, trash receptacles, bike racks, telephones, nature study areas, etc.

d. General Open Space – Greenway

Size: Variable depending upon location, setting and unique features such as flood conditions, soils, topography, views, vegetation and wildlife eco-systems, generally not less than 5 acres.

Acres per People: Variable, but intended to serve the entire population of the community.

NOTE: Purpose is to preserve the natural and scenic beauty of areas which are central to the community's identity and image. A permit from the

Division of State Lands and the Corps of Engineers is required to place or remove over 50 cubic years of material from a stream or wetland.

e. Nature trails and Scenic Pathways

Size: An average of 1 to 2 miles long with a use intensity of about 50 people per day. Longer trails have a use intensity of about 40 people per mile per day in rural areas.

Location: Bordering transportation and utility corridors, flood plains and other areas of natural beauty and scenic value.

Facilities/Activities: Paved or graveled walking surfaces; trash receptacles and benches related to natural stopping or rest areas. Landscaping should relate to the environment through which the trail and pathway move.

f. Conservation Management Areas

Location: Those areas generally within the 100 year flood line which are described as wetlands, marsh, bog and ponds, and to include all creek and natural drainage ways.

Facilities/Activities: Only those permitted which will enhance the areas such as protective guardrails, elevated walkways and view points; benches and trash receptacles; descriptive interpretive signing. Compatible activities are nature study, walking and viewing.

g. Cultural Facilities

Location: Depends on facility being provided. Malls and plazas should be placed in the commercial core or well developed areas. Larger facilities should be located away from congestion; a plaza can be incorporated into a larger facility or complex. Should serve the entire community.

Facilities/Activities: Cultural facilities may include plazas, malls, small parks, fountains, open-air/indoor theaters, and a library and meeting hall complex. Trash receptacles and benches shall be provided. For landscaped areas irrigation shall be provided. Larger facilities shall provide off street parking.

h. Historic Sites

Location: See appendix for 1989 "Sherwood Cultural Resources".

Facilities/Activities: Designated historic sites shall be maintained, developed or incorporated into a development in a way that preserves the integrity of the site or structure. Interpretive signs and trash receptacles should be provided. Parking, trails, picnic facilities, and protective fencing should be provided when feasible.

i. Community Centers

Location: Should be easily accessible to all groups intended to be served by the facility. Shall be located with a direct access by auto, transit or pathway.

Facilities/Activities: Could be for a specific age group (i.e. senior citizens or youths) or the entire community. Centers shall provide meeting rooms, kitchen or concessions lounges, work rooms, rest rooms, trash receptacles, off-street parking, and landscaped areas.

5. PARK AND OPEN SPACE PLAN FEATURES (See Map V-1)

Based on a thorough inventory of the Urban Area's existing recreation and open space resources, the development of plan goals and objectives and the application of the standards in Section 4 of this chapter, a general plan was developed. The Natural Resource and Recreation Plan Map includes three major components; a) developed parks; b) natural areas, wetlands, and greenways; and c) trails, scenic corridors.

a. Parks

The future park system will include neighborhood and community parks with facilities and in locations consistent with the needs of City residents and visitors, and the City's ability to maintain those facilities.

Community Park: Stella Olsen Park will continue to be the primary focus of major recreational activities. It will contain a variety of recreational opportunities and be related to the Old Town commercial center and central area schools. Joint use of park and school facilities will continue to be encouraged. Expansion of Stella Olsen park to the north to include the site now known as Glen Park is suggested. Additional public access to Stella Olsen Park and the remainder of the greenway is planned from North Sherwood Boulevard. Stella Olsen Park should provide for most of the City's central recreational needs. Additional picnic and playfield areas, limited due to excessive slopes and wet soils can be provided by joint use of school sites and an expanded neighborhood park system. Encourage implementation of the 1989 Stella Olsen Park Master Plan.

Neighborhood Parks: Outside of the central area, possible park sites may be located in close proximity to residential areas. It is the intent of the plan to encourage acquisition and/or development of these or similarly situated sites

and to take advantage of site donations, access, significant natural areas, views, and vegetation. Joint park school sites will be sought in conjunction with the Sherwood School District's long range facilities improvement plan. It is the intent of this plan to stress the importance of accessible neighborhood parks of between 2 and 5 acres to serve neighborhoods of 2,000 to 4,000 persons. Based on the standard developed in Subsection 4 the City will strive for four or five neighborhood parks. Several potential future sites were identified in the 1980 Plan. They are listed below. Specific sites were removed in the 1989-1991 Plan update.

1. Edy Road Site
2. Scholls Sherwood Site (possible school/park site)
3. Town Square Site
4. Murdock Road Site (possible school/park site)
5. Four Corners Site
6. High School Site (possible school/park site)
7. Reservoir Site

b. Greenways: An open space system consisting of the flood plains of Cedar Creek and Rock Creek will be acquired and preserved for public use as passive open space and natural drainage ways. Creek greenways may be linked to a regional greenway along the Tualatin River. A principal use of the greenways will be to provide for linkages between parks and major activity centers. Continuity between the Cedar Creek and Rock Creek greenways will be made by using connections through the school property on North Sherwood Boulevard. The Tonquin Scabland Geologic Area shall be preserved and enhanced by very low density residential development and P.U.D.'s.

c. Trails, bikeways and scenic corridors: The parks and open spaces in the urban area will be connected by a system of inter-connecting trails, bikepaths and scenic corridors. Combination pedestrian and bikeways will be developed to link all parts of the urban area along major transportation routes. Trails will be developed within and between the greenways system and will be designed to enhance public access and the enjoyment of natural areas preserved by the plan. Where possible trails will make use of utility and street easements.

d. Historic and Cultural Resources: Structures and sites which maintain continuity with the City's past and which provide places for persons to congregate and enjoy cultural activities will be developed and/or preserved. The City will consider the preservation of structures and sites of historic and/or architectural significance as identified by the 1989 Sherwood Cultural Resources Inventory. It is the intention of this plan to preserve and develop distinctive historic or cultural features of the Planning Area so as to maintain

the City's unique identity in the face of urban growth. The 132 sites identified in the 1989 Cultural and Historic Resources Survey shall be reviewed to determine which should be designated landmarks to be protected by historic landmark protection standards in the code.

6. FINANCE, ACQUISITION, AND MAINTENANCE OF RECREATIONAL AREAS AND FACILITIES

The financing of the recreation and open space areas and facilities identified in this plan and those to be detailed in the proposed site-specific recreation and open space plans is the responsibility of existing and future property owners of Sherwood aided by available funding from state and federal agencies. It is the intention of the City to develop a detailed recreation and open space system capital improvements plan which will detail revenue sources and scheduling for needed areas and facilities. In the interim the following approaches will be employed to acquire and develop Sherwood's recreational resources.

a. Community Parks: Funds for the expansion, development and maintenance of existing and future community parks will be through the general revenue park fund, state and federal grant programs and special bond elections.

b. Rock Creek and Cedar Creek Greenways and the TSGA: The City will acquire portions of the proposed greenways and the TSGA according to the following procedures.

   (1) Require the dedication of the greenway and natural area portions of proposed new development, including PUD's, subdivisions, partitions, and site plans.

   (2) Allow transfer of density from portions of sites within designated greenways or natural areas to buildable portions of sites outside of the greenway as compensation for the dedication of the greenway portion.

   (3) Acquire portions of greenways or natural areas in developed areas through donation, and/or purchase using state and federal grants, and City system development charges.

c. Neighborhood Parks: The acquisition and development of neighborhood recreational facilities shall be financed by a neighborhood facilities assessment based on the neighborhood park standards (acres/person) as applied to neighborhood areas defined in the Plan.

d. Trails, Bikeways, and Scenic Corridors: Trails and bikeways which are a part of identified greenways or parks will be financed and maintained from the sources for those areas and facilities specified above. Bikeways and

pedestrian ways to be located within dedicated street rights of way will be consistent with the street's functional design standards. Scenic corridors or conservation easements on major streets will be developed and maintained as portions of on-site landscaping requirements for new development. Scenic corridors along existing developed property will be acquired through donation or purchase from general street or park funds, or state and federal grants.

F. ENERGY RESOURCES

1. EXISTING CONDITIONS

The City currently has no comprehensive policy which addresses energy conservation. The accelerating costs and declining amounts of non-renewable energy resources needs no additional documentation. In the context of the Sherwood Comprehensive Plan, energy is treated as an essential environmental resource which will require careful management at the local as well as County, State and Federal levels of government. In the preparation of the following policies and strategies, the City has made use of the Oregon Department of Energy's publication entitled Community Energy Planning and the MSD City energy analysis information (See Section V Background Date and Analysis.

2. ENERGY POLICIES AND STRATEGIES

In order to achieve the energy resource goals stated in Subsection B above the following policies and strategies shall be established.

Policy 1 The City will seek to minimize petroleum based energy use.

Strategy:

- The City will provide for the construction of bikeways and pedestrian paths connecting major activity centers.
- The City will review new development to discourage excess or inefficient lighting and minimize the use of energy for public lighting.
- The City will work with Tri-Met to encourage the use of mass transit by increasing densities near transit routes, expanding routes, providing park and ride and shelter facilities and improving bus travel times.
- The City will encourage the development and use of the Southern Pacific rail corridor for transit and shipping.

Policy 2 **The City will seek to cooperate with other governmental and private agencies engaged in energy conservation efforts and seek ways to expand its role and influence in achieving more efficient use of energy resources.**

Strategy:

- The City will cooperate with the METRO energy conservation strategy.
- The City will cooperate with Washington County, METRO, and the State in developing and employing new incentives to conserve energy such as incentives for the recycling of solid waste and tax incentives for energy efficient devices and improvements.

Policy 3 **The City will encourage the use of renewable sources of energy.**

Strategy:

- The City will review new development for solar and wind exposure and provide for flexibility in site layout to realize the energy benefits of sun and wind orientation.
- The appropriate retention of natural features and the use of landscaping for conservation and solar and wind use will be incorporated into review criteria for new development.
- The City will work with appropriate governmental agencies to reduce the environmental impact of wood burning.

Policy 4 **The City will encourage energy efficiency in the design and use of sites, structures, transportation systems and utilities.**

Strategy:

- The City will enforce Chapter 53 of the Uniform Building Code.
- The City will consider density bonuses for energy efficient sites and structure design in the approval of new development.
- The City will encourage the use of energy efficient structure design such as common wall and zero lot line units and two story buildings.
- The City will investigate the use of solar access legislation while reviewing new development to insure the availability of light, wind, and air.

- Housing, shopping and employment will be located to reduce the amount of energy needed for transportation between them. Multi-use planned developments will be encouraged.

- Reduce urban sprawl by increasing residential densities, eliminating strip commercial development and scattered industrial and commercial uses; and encourage the infill of passed over land.

- The City will seek to reduce public utility and street standards to a minimum functional level.

- The City will encourage energy efficient industrial activities.